Word: emit

Database: Any

Search type: Exact Search

Go Reset

Found 2 hits - *Term: emit, Database: *, Strategy: exact*

[1] : Webster's Revised Unabridged Dictionary (1913)

Emit \E*mit"\, v. t. [imp. & p. p. **Emitted**; p. pr. & vb. n. **Emitting**.] [L. emittere to send out; e out + mittere to send. See **Mission**.]

1. To send forth; to throw or give out; to cause to issue; to give vent to; to eject; to discharge; as, fire emits heat and smoke; boiling water emits steam; the sun emits light.

   Lest, wrathful, the far-shooting god emit His fatal arrows. --Prior.

2. To issue forth, as an order or decree; to print and send into circulation, as notes or bills of credit.

   No State shall . . . emit bills of credit. --Const. of the U. S.

See also: [Emitted] [Emitting] [Mission]

[2] : WordNet (r) 1.7

emit

v 1: expel, as of gases and odors [syn: **breathe**, **give off**, **pass off**]
2: give off, send forth, or discharge; as of light, heat, or radiation, vapor, etc.; "The ozone layer blocks some harmful rays which the sun emits." [syn: **give out**, **give off**] [ant: **absorb**]
3: express audibly; utter sounds (not necessarily words); "She let out a big heavy sigh"; "He uttered strange sounds that nobody could understand" [syn: **utter**, **let out**, **let loose**]

See also: [breathe] [give off] [pass off] [give out] [give off] [absorb] [utter] [let out] [let loose]

Word: illuminate

Database: Any

Search type: Exact Search

Go Reset

Found 5 hits - *Term: illuminate, Database: *, Strategy: exact*

[1] : Webster's Revised Unabridged Dictionary (1913)

Illuminate \Il*lu"mi*nate\, v. i.
To light up in token or rejoicing.

[2] : Webster's Revised Unabridged Dictionary (1913)

Illuminate \Il*lu"mi*nate\, a. [L. illuminatus, p. p.]
Enlightened. --Bp. Hall.

[3] : Webster's Revised Unabridged Dictionary (1913)

Illuminate \Il*lu"mi*nate\, n.
One who enlightened; esp., a pretender to extraordinary light and knowledge.

[4] : Webster's Revised Unabridged Dictionary (1913)

Illuminate \Il*lu"mi*nate\, v. t. [imp. & p. p. **Illuminated**; p. pr. & vb. n. **Illuminating**.] [L. illuminatus, p. p. of illuminare; pref. il- in + luminare to enlighten, fr. lumen light. See **Luminous**, and cf. **Illume**, **Illumine**, **Enlimn**, **Limn**.]

1. To make light; to throw light on; to supply with light, literally or figuratively; to brighten.

2. To light up; to decorate with artificial lights, as a building or city, in token of rejoicing or respect.

3. To adorn, as a book or page with borders, initial letters, or miniature pictures in colors and gold, as was done in manuscripts of the Middle Ages.

4. To make plain or clear; to dispel the obscurity to by knowledge or reason; to explain; to elucidate; as, to illuminate a text, a problem, or a duty.

See also: [Illuminated] [Illuminating] [Luminous] [Illume] [Illumine] [Enlimn] [Limn]

[5] : WordNet (r) 1.7

illuminate
v 1: make lighter or brighter; "This lamp lightens the room a bit" [syn: **light**, **illume**, **illumine**, **light up**]
2: make free from confusion or ambiguity; make clear: "Could you clarify these remarks?"; "Clear up the question of who is at fault" [syn: **clarify**, **clear**, **clear up**, **shed light on**, **crystallize**, **crystallise**, **crystalize**, **crystalise**, **straighten out**, **sort out**, **enlighten**, **elucidate**] [ant: **confuse**]
3: paint, as of medieval manuscripts

See also: [light] [illume] [illumine] [light up] [clarify] [clear] [clear up] [shed light on] [crystallize] [crystallise] [crystalize] [crystalise] [straighten out] [sort out] [enlighten] [elucidate] [confuse]

Cyrfile #1

L41 ANSWER 31 OF 32 SCISEARCH COPYRIGHT 2003 THOMSON ISI
AN 95:744638 SCISEARCH
GA The Genuine Article (R) Number: TA853
TI CARCINOGENIC AND MELANOGENIC EFFECTS OF A FILTERED METAL HALIDE UVA SOURCE AND A TUBULAR FLUORESCENT UVA TANNING SOURCE WITH OR WITHOUT ADDITIONAL SOLAR-SIMULATED UV-RADIATION IN HAIRLESS MICE
AU BECHTHOMSEN N (Reprint); WULF H C
CS NATL UNIV HOSP, RIGSHOSP, DEPT DERMATOL, PHOTOBIOL LAB, BLEGDAMSVEJ 9, DK-2100 COPENHAGEN, DENMARK (Reprint)
CYA DENMARK
SO PHOTOCHEMISTRY AND PHOTOBIOLOGY, (OCT 1995) Vol. 62, No. 4, pp. 773-779. ISSN: 0031-8655.
DT Article; Journal
FS LIFE
LA ENGLISH
REC Reference Count: 28
AB The carcinogenic and melanogenic effects of a filtered metal halide source (UVASUN) that **emits** UV radiation in a range from 340 to 400 nm and a bank of Philips TL 09R tubes (TL 09) **emitting** in a range from 310 to 400 nm were studied in lightly pigmented hairless hr/hr C3H/Tif mice. Both the carcinogenic effect of the two UVA radiation sources alone and in combination with a UV source, consisting of one Philips TL 12 and five Bellarium-S SA-1-12 tubes **emitting** radiation somewhat similar to the UV part of the solar spectrum (SOLAR UV), were investigated. Finally, the melanogenic effect of exposure to the two UVA sources were studied. The mice were exposed to the UVA sources 30 min/day, 5 days/week, in equal erythemogenic doses, calculated by using the Commission Internationale de l'Eclairage human erythema action spectrum. Equal erythemogenic doses of TL 09 and UVASUN induced the same degree of **skin** pigmentation, but **skin** tumor development was enhanced in mice exposed to TL 09 compared with UVASUN ($P < 0.0005$). For all but one tumor, endpoint pretreatment with TL 09 or UVASUN for 91 days did not influence tumor development during subsequent exposure to SOLAR UV radiation 10 min/day, 4 days/week. Exposure to the two UVA radiation sources after 91 days of SOLAR UV exposure significantly enhanced **skin** tumor development. Overall, the data on the interaction between exposure to the UVA sources and SOLAR UV indicated that the risk of SOLAR UV-induced carcinogenesis was independent of the type of prior-UVA exposure and post-UVA exposure.
CC BIOPHYSICS; BIOCHEMISTRY & MOLECULAR BIOLOGY
STP KeyWords Plus (R): **SKIN** TUMOR-DEVELOPMENT; ULTRAVIOLET-IRRADIATION; RISKS; PHOTOCARCINOGENESIS; **SUNSCREENS**; EQUIPMENT; INDUCTION; DEVICES; LIGHT; MOUSE
RE

Referenced Author (RAU)	Year (RPY)	VOL (RVL)	PG (RPG)	Referenced Work (RWK)
ALCALAY J	1989	50	217	PHOTOCHEM PHOTOBIOL
BECHTHOMSEN N	1988	124	1215	ARCH DERMATOL
BECHTHOMSEN N	1992	284	353	ARCH DERMATOL RES
BECHTHOMSEN N	1993	64	445	INT J RADIAT BIOL
BECHTHOMSEN N	1994	22	119	J PHOTOCH PHOTOBIO B
BECHTHOMSEN N	1991	8	139	PHOTODERM PHOTOIMMUN
BICKERS D R	1985	12	380	J AM ACAD DERMATOL
DEGRUIJL F R	1991	51	979	CANCER RES
DEGRUIJL F R	1993	53	53	CANCER RES
DIFFEY B L	1984	8	139	PHOTODERMATOL PHOTOI
DIFFEY B L	1987	4	273	PHOTODERMATOL PHOTOI
KINLEY J S	1994	103	97	J INVEST DERMATOL
KLIGMAN L H	1985	67	1289	J NATL CANCER I
LUNDGREN K	1988	47	559	PHOTOCHEM PHOTOBIOL
MCKINLAY A F	1987	6	17	CIE J
MOAN J	1994	22	77	J PHOTOCH PHOTOBIO B

Copy file 2.

L41 ANSWER 30 OF 32 SCISEARCH COPYRIGHT 2003 THOMSON ISI
AN 96:87057 SCISEARCH
GA The Genuine Article (R) Number: TQ245
TI MINIMUM DOSES OF ULTRAVIOLET-RADIATION REQUIRED TO INDUCE MURINE **SKIN** EDEMA AND IMMUNOSUPPRESSION ARE DIFFERENT AND DEPEND ON THE ULTRAVIOLET EMISSION-SPECTRUM OF THE SOURCE
AU LEARN D B (Reprint); BEASLEY D G; GIDDENS L D; BEARD J; STANFIELD J W; ROBERTS L K
CS SCHERING PLOUGH CORP, HEALTHCARE PROD, ADV PROD RES, 3030 JACKSON AVE, MEMPHIS, TN, 38151 (Reprint); SCHERING PLOUGH CORP, HEALTHCARE PROD, SOLAR RES LABS, MEMPHIS, TN, 38151
CYA USA
SO PHOTOCHEMISTRY AND PHOTOBIOLOGY, (DEC 1995) Vol. 62, No. 6, pp. 1066-1075. ISSN: 0031-8655.
DT Article; Journal
FS LIFE
LA ENGLISH
REC Reference Count: 43
AB Many photoimmunological studies have used UV radiation sources that **emit** nonsolar UV spectral energy and UV doses based on nonimmunological endpoints, e.g. erythema and **skin** edema. Interpretation of these data has led to misunderstanding when extrapolated to hypothetical effects in humans exposed to solar UV. The purpose of this study was to: (1) establish UV dose response relationships for murine **skin** edema and immunosuppression, and (2) determine how different UV spectra affect these relationships. Back **skin** and ear minimum edema doses (MEdD) for Kodacel-filtered FS20 sunlamp UV (290-400 nm) were greater than two-fold higher than those for unfiltered FS20 sunlamp UV (250-400 nm). Xenon are solar simulator UV (295-400 nm) MEdD were >10-fold higher than those for unfiltered sunlamp UV. Back **skin** and ear MEdD differed two- to five-fold between C3H/ HeN, SWR/J and HRA/Skh-1 mice. The minimum immunosuppression doses (MISD) in C3H mice showed similar UV source spectrum dependence. The solar simulator UV MISD was 5.3- and 1.5-fold higher than for unfiltered and Kodacel-filtered sunlamp UV MISD, respectively. Furthermore, MISD were from 3- to 50-fold higher than the MEdD for the three UV sources. The UV bioeffectiveness spectra indicated that UVC energy (250-290 nm) contributed 12% and 18%, respectively, of the total **skin** edema and immunosuppression UV energy. These data demonstrate the variability in UV sensitivity among mouse strains, the significant differences between murine MEdD and MISD and how these differences are influenced by nonsolar regions (below 295 nm) of the UV spectrum.
CC BIOPHYSICS; BIOCHEMISTRY & MOLECULAR BIOLOGY
STP KeyWords Plus (R): CONTACT HYPERSENSITIVITY; HAIRLESS MOUSE; **SUNSCREEN**; MICE; SUPPRESSION; IRRADIATION; RESPONSES; CELLS; LIGHT; UNRESPONSIVENESS

=> d

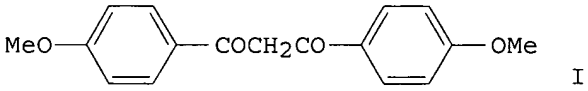
L9 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2003 ACS
RN 52441-07-3 REGISTRY
CN **Parsol (9CI)** (CA INDEX NAME)
ENTE A sun screening agent for cosmetics. Only entry
MF Unspecified
CI PMS, MAN
PCT Manual registration
LC STN Files: BIOBUSINESS, BIOSIS, CA, CAPLUS, CIN, CSCHEM, PROMT, TOXCENTER, USPATFULL

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
6 REFERENCES IN FILE CA (1957 TO DATE)
6 REFERENCES IN FILE CAPLUS (1957 TO DATE)

L16 ANSWER 17 OF 17 CAPLUS COPYRIGHT 2003 ACS
AN 1976:425280 CAPLUS
DN 85:25280
TI Composition for protecting the skin against sunlight
IN Voegeli, Roland
PA Givaudan, L., et Cie. S. A., Switz.
SO Ger. Offen., 13 pp.
CODEN: GWXXBX
DT Patent
LA German
IC A61K
CC 62-4 (Essential Oils and Cosmetics)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 2540798	A1	19760408	DE 1975-2540798	19750912
	CH 595840	A	19780228	CH 1974-12920	19740924
	AU 7584238	A1	19770303	AU 1975-84238	19750825
	NL 7510873	A	19760326	NL 1975-10873	19750916
	SE 7510617	A	19760325	SE 1975-10617	19750922
	SE 429098	B	19830815		
	SE 429098	C	19831124		
	FR 2285853	A1	19760423	FR 1975-28946	19750922
	FR 2285853	B1	19790323		
	JP 51061641	A2	19760528	JP 1975-115480	19750923
	AT 7507267	A	19770215	AT 1975-7267	19750923
	AT 339493	B	19771025		
	GB 1473483	A	19770511	GB 1975-38955	19750923
PRAI	CH 1974-12920		19740924		

GI



I

AB Dianisoylmethane (I) [18362-51-1] and its homologs are uv A-filters (i.e. absorbed light in the skin-tanning **wavelength** range 320-400 nm) and enhance the protective action of uv B filters (which absorb light in the erythema-inducing range 290-320 nm). For example, a sun screen cream was prepd. contg. I 2.0, Vaseline oil 6.0, Ca stearate 3.0, white Vaseline 13.0, **Parsol** MCX 3.0, cholesterol 2.0, white beeswax 3.0, vegetable oil 10.0, 70% aq. sorbitol 5.0, MgSO4 0.4, perfume, preservative, and water 52.6 parts by wt.
ST anisoylmethane sun screen; sun screen dianisoylmethane
IT Sunburn and Suntan
(sun screens for, dianisoylmethane in)
IT 18362-51-1
RL: BIOL (Biological study)
(in sun screens)

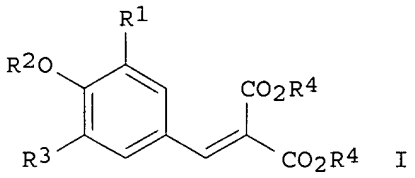
=>

L16 ANSWER 15 OF 17 CAPLUS COPYRIGHT 2003 ACS
AN 1996:9102 CAPLUS
DN 124:139831
TI The protective effect of a broad-spectrum sunscreen against chronic UVA radiation in hairless mice: A histologic and ultrastructural assessment
AU Kligman, Lorraine H.; Zheng, Peishu
CS School Medicine, University Pennsylvania, Philadelphia, PA, 19104-6142, USA
SO Journal of the Society of Cosmetic Chemists (1994), 45(1), 21-33
CODEN: JSCCA5; ISSN: 0037-9832
PB Society of Cosmetic Chemists
DT Journal
LA English
CC 8-6 (Radiation Biochemistry)
AB Long-**wavelength** UVA (>340 nm) has been shown capable of inducing dermal damage with chronic exposure. This study assesses the effect of a broad spectrum (SPF-15) sunscreen contg. avobenzone (**Parsol** 1789) in comparison to an oxybenzone-contg. sunscreen. Albino hairless mice were irradiated thrice weekly (100 J/cm2/exposure) for a cumulative dose of 8000 J/cm2 after 32 wk. Sunscreens were applied (2 .mu.l/cm2) to two groups of mice. The third group was unprotected, and a fourth served as a normal unirradiated control. Unprotected, irradiated mice developed epidermal acanthosis and dermal elastic fiber hyperplasia with increased glycosaminoglycans. Mice protected with the avobenzone-contg. sunscreen had marginal epidermal hyperplasia but no other histol. damage. By contrast, mice protected with the oxybenzone-contg. sunscreen, surprisingly, had damage that exceeded what was seen in unprotected mice. Electron microscopy confirmed the histol. findings and revealed further ultrastructural differences between the treatment groups. The unexpected exacerbation of photodamage with the oxybenzone-contg. sunscreen was very likely not due to the oxybenzone but rather to irritation induced by some component in the vehicle. All SPF-15 sunscreens, by definition, must protect against sunburn. The consequences of chronic exposure may be quite different and are clin. relevant.
ST avobenzone sunscreen chronic UVA radiation; oxybenzone sunscreen chronic UVA radiation
IT Sunscreens
(protective effect of a broad-spectrum sunscreen contg. avobenzone (**Parsol** 1789) in comparison with an oxybenzone-contg. sunscreen against chronic UVA radiation in hairless mice)
IT Ultraviolet radiation
(A, protective effect of a broad-spectrum sunscreen contg. avobenzone (**Parsol** 1789) in comparison with an oxybenzone-contg. sunscreen against chronic UVA radiation in hairless mice)
IT 131-57-7, Oxybenzone
RL: ADV (Adverse effect, including toxicity); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(protective effect of a broad-spectrum sunscreen contg. avobenzone (**Parsol** 1789) in comparison with an oxybenzone-contg. sunscreen against chronic UVA radiation in hairless mice)
IT 70356-09-1, **Parsol** 1789
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(protective effect of a broad-spectrum sunscreen contg. avobenzone (**Parsol** 1789) in comparison with an oxybenzone-contg. sunscreen against chronic UVA radiation in hairless mice)

L16 ANSWER 14 OF 17 CAPLUS COPYRIGHT 2003 ACS
AN 1997:315693 CAPLUS
DN 126:347153
TI Photostable cosmetic sunscreens containing dibenzoylmethane derivative and dialkylbenzalmalonate
IN Deflandre, Andre; Forestier, Serge; Lang, Gerard; Richard, Herve; Leduc, Madeleine
PA L'oreal, Fr.
SO U.S., 5 pp., Cont. of U. S. Ser. No. 677,376.
CODEN: USXXAM
DT Patent
LA English
IC ICM A61K007-42
ICS A61K007-40; A61K031-12
NCL 424059000
CC 62-4 (Essential Oils and Cosmetics)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 5624663	A	19970429	US 1995-476095	19950607
US 5670140	A	19970923	US 1996-736528	19961024
PRAI FR 1987-12047		19870828		
US 1988-236645		19880825		
US 1991-677376		19910327		
US 1995-476095		19950607		

OS MARPAT 126:347153
GI



I

AB A photostable cosmetic filter compn. for protecting human skin against UV radiation at **wavelengths** between 280 and 380 nm comprises at least one oily phase, 1 to 3% by wt. of a dibenzoylmethane deriv. and at least 1% by wt. of a substituted dialkylbenzalmalonate (I; R1, R3 = H, C1-8 alkoxy radical; R2, R4 = C1-8 alkyl radical). The molar ratio of compd. I to the dibenzoylmethane deriv. is greater than or equal to 0.6. A sunscreen lotions contained **Parsol** 1789 (4-(1,1-dimethyl)-4'-methoxydibenzoylmethane) 1.5, di(2-ethylhexyl)-3',4-diemthyoxybenzalmalonate 4.5, and iso-Pr myristate q.s. 100 g.
ST photostability cosmetic sunscreen dibenzoylmethane deriv alkylbenzalmalonate
IT Alcohols, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(C16-18, ethoxylated; photostable cosmetic sunscreens contg. dibenzoylmethane deriv. and dialkylbenzalmalonate)
IT Alcohols, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(C16-18; photostable cosmetic sunscreens contg. dibenzoylmethane deriv. and dialkylbenzalmalonate)
IT Cosmetics
(emollients; photostable cosmetic sunscreens contg. dibenzoylmethane deriv. and dialkylbenzalmalonate)
IT Cosmetics

(emulsions, sunscreens; photostable cosmetic sunscreens contg. dibenzoylmethane deriv. and dialkylbenzalmalonate)

IT Sunscreens

(emulsions; photostable cosmetic sunscreens contg. dibenzoylmethane deriv. and dialkylbenzalmalonate)

L16 ANSWER 12 OF 17 CAPLUS COPYRIGHT 2003 ACS
AN 1999:409577 CAPLUS
DN 131:49223
TI Use of synthetic beeswax for fortification of UV-A-protective cosmetic or dermatological formulations
IN Gers-Barlag, Heinrich; Uhlmann, Beate; Kroepke, Rainer
PA Beiersdorf A.-G., Germany
SO Ger. Offen., 14 pp.
CODEN: GWXXBX
DT Patent
LA German
IC ICM A61K007-42
CC 62-4 (Essential Oils and Cosmetics)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI DE 19756921	A1	19990624	DE 1997-19756921	19971219
PRAI DE 1997-19756921		19971219		

AB Synthetic beeswax increases the UV-A protection capacity of sunscreen prepns. which contain conventional UV-A filter substances or broad-spectrum optical filter substances which protect at **wavelengths** >335 nm. This effect allows use of lower concns. of expensive UV-A filter substances. Thus, an oil-in-water lotion contained glyceryl stearate 3.50, stearic acid 1.80, glycerin 3.00, cetearyl alc. 0.50, octyldodecanol 7.00, dicaprylyl ether 8.00, **Parsol** 1789 3.00, synthetic beeswax 1.00, Carbomer 0.20, 45% NaOH soln. 0.20, preservative, perfume, and demineralized water to 100.00 wt.%.
ST beeswax synthetic sunscreen; UV filter beeswax synergism sunscreen
IT Optical filters
(UV; synthetic beeswax for fortification of UV-A-protective cosmetic or dermatol. formulations)
IT Sunscreens
(synthetic beeswax for fortification of UV-A-protective cosmetic or dermatol. formulations)
IT Beeswax
(synthetic; synthetic beeswax for fortification of UV-A-protective cosmetic or dermatol. formulations)
IT 120-46-7D, Dibenzoylmethane, derivs. 131-57-7, 2-Hydroxy-4-methoxybenzophenone 36861-47-9, Eusolex 6300 63250-25-9 70356-09-1, 4-tert-Butyl-4'-methoxydibenzoylmethane 88122-99-0, Uvinul T 150 170864-82-1 180898-37-7 187393-00-6, CGF 1607 214349-98-1 226952-41-6 226952-42-7 226952-43-8 226952-44-9 226952-45-0 226952-46-1
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(synthetic beeswax for fortification of UV-A-protective cosmetic or dermatol. formulations)

L16 ANSWER 13 OF 17 CAPLUS COPYRIGHT 2003 ACS
AN 1999:405223 CAPLUS
DN 131:49218
TI Use of beeswax for fortification of UV-A-protective cosmetic or dermatological formulations
IN Gers-Barlag, Heinrich; Kroepke, Rainer; Uhlmann, Beate
PA Beiersdorf A.-G., Germany
SO Ger. Offen., 12 pp.
CODEN: GWXXBX
DT Patent
LA German
IC ICM A61K007-42
CC 62-4 (Essential Oils and Cosmetics)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

PI DE 19756376 A1 19990624 DE 1997-19756376 19971218
EP 935959 A2 19990818 EP 1998-123264 19981207
EP 935959 A3 20010606
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO
PRAI DE 1997-19756376 A 19971218
AB Beeswax increases the UV-A protection capacity of sunscreen prepns. which contain conventional UV-A filter substances or broad-spectrum optical filter substances which protect at **wavelengths** >335 nm. This effect allows use of lower concns. of expensive UV-A filter substances. Thus, an oil-in-water lotion contained glyceryl stearate 3.50, stearic acid 1.80, glycerin 3.00, cetearyl alc. 0.50, octyldodecanol 7.00, dicaprylyl ether 8.00, **Parsol** 1789 3.00, beeswax 1.00, Carbomer 0.20, 45% NaOH soln. 0.20, preservative, perfume, and demineralized water to 100.00 wt.%.
ST beeswax sunscreen; UV filter beeswax synergism sunscreen
IT Optical filters
(UV; beeswax for fortification of UV-A-protective cosmetic or dermatol. formulations)
IT Beeswax
Sunscreens
(beeswax for fortification of UV-A-protective cosmetic or dermatol. formulations)
IT 120-46-7D, Dibenzoylmethane, derivs. 131-57-7, 2-Hydroxy-4-methoxybenzophenone 36861-47-9, Eusolex 6300 63250-25-9 70356-09-1, 4-tert-Butyl-4'-methoxydibenzoylmethane 88122-99-0, Uvinul T 150 170864-82-1 180898-37-7 187393-00-6 214349-98-1 226952-41-6 226952-42-7 226952-43-8 226952-44-9 226952-45-0 226952-46-1
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(beeswax for fortification of UV-A-protective cosmetic or dermatol. formulations)

L16 ANSWER 10 OF 17 CAPLUS COPYRIGHT 2003 ACS
AN 2000:284202 CAPLUS
DN 133:8995
TI Investigation on the photostability of a tretinoin lotion and stabilization with additives
AU Brisaert, M.; Plaizier-Vercammen, J.
CS Pharmaceutical Institute, Laboratory of Pharmaceutical Technology and Physical Pharmacy, Free University of Brussels, Brussels, 1090, Belg.
SO International Journal of Pharmaceutics (2000), 199(1), 49-57
CODEN: IJPHDE; ISSN: 0378-5173
PB Elsevier Science B.V.
DT Journal
LA English
CC 63-5 (Pharmaceuticals)
AB Tretinoin, a drug that is used in topical prepns. for the treatment of acne vulgaris, is known to be very susceptible to degrdn. under daylight. The objective of this work was to investigate the degrdn. of a tretinoin lotion placed in front of a xenon lamp. Anal. was performed by HPLC. The tretinoin lotion was degraded to about 20% of its initial concn. within 30 min. Incorporation of tretinoin in .beta.-cyclodextrin or in some surfactants (Brij) did not have any effect on the photodegrdn. of tretinoin. Neither could a UVB sunscreen retard the photodegrdn. of tretinoin, while a UVA sunscreen had very little effect. Irradn. with selected **wavelengths** revealed that 420 nm seemed to be the most harmful **wavelength** for the degrdn. of tretinoin and not the **wavelength** of max. absorption (350 nm) as expected. Then the addn. of the yellow dyes, Chrysoin and Fast yellow, absorbing in the region of 420 nm, was tested. These colorants did indeed retard the photodegrdn. of tretinoin more or less depending on the concn. of the dye. Finally we only had to select a concn. that was still effective but that did not color the skin.
ST photostability tretinoin lotion additive stabilization
IT Drug delivery systems
(lotions; photostability of tretinoin lotion and stabilization with additives)
IT Photolysis
Stabilizing agents
Sunscreens
Surfactants
(photostability of tretinoin lotion and stabilization with additives)
IT 131-55-5, Uvinul D 50 9002-92-0, Brij 30 9004-98-2, Brij 92 9005-00-9, Brij 78 70356-09-1, **Parsol** 1789
RL: MOA (Modifier or additive use); USES (Uses)
(photostability of tretinoin lotion and stabilization with additives)
IT 547-57-9, Chrysoin 2706-28-7 240406-19-3, Acudyne 290
RL: MOA (Modifier or additive use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(photostability of tretinoin lotion and stabilization with additives)
IT 302-79-4, Tretinoin
RL: PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(photostability of tretinoin lotion and stabilization with additives)
IT 7585-39-9, .beta.-Cyclodextrin
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(photostability of tretinoin lotion and stabilization with additives)
RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE

L16 ANSWER 8 OF 17 CAPLUS COPYRIGHT 2003 ACS
AN 2001:248033 CAPLUS
DN 134:304786
TI A chromatospectroscopic method for analyzing the signals generated during high-performance liquid chromatography with diode-array detection
AU Fourneron, Jean-Dominique
CS Laboratoire de Chimie Analytique de l'Environnement, Faculte des Sciences et Techniques de Saint-Jerome, Marseille, 13397, Fr.
SO Journal of Chromatographic Science (2001), 39(4), 160-164
CODEN: JCHSBZ; ISSN: 0021-9665
PB Preston Publications
DT Journal
LA English
CC 80-4 (Organic Analytical Chemistry)
AB A chromatospectroscopic technique was developed to quantitate two compds. that coelute in HPLC. The method uses a diode-array detector with Millenium 32 software to ext. spectra at regular time intervals during the elution of the unique peak and recover spectral data (absorbance vs. **wavelength**), which can then be processed using the Excel software package. The method is applied to mixts. of two coeluting UV filters. Both could be accurately quantitated even when the mixt. consisted of 99.5% of one and only 0.5% of the other. (c) 2001 Preston Publications.
ST chromatospectroscopic signal analysis HPLC diode array detection
IT Data processing
HPLC
(a chromatospectroscopic method for analyzing the signals generated during high-performance liq. chromatog. with diode-array detection)
IT UV and visible spectra
(of **Parsol** 1789 and **Parsol** MCX)
IT 5466-77-3, **Parsol** MCX 70356-09-1, **Parsol** 1789
RL: ANT (Analyte); PRP (Properties); ANST (Analytical study)
(analyte; a chromatospectroscopic method for analyzing the signals generated during high-performance liq. chromatog. with diode-array detection)
RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Gagliardi, L; J Chromatogr 1992, V408, P409
(2) Gorenstein, M; LC-GC 1994, V12, P768 CAPLUS
(3) Owino, E; J Chromatogr Sci 1991, V29, P450 CAPLUS
(4) Sanchez, F; Anal Chim Acta 1994, V285, P181 CAPLUS
(5) Szabo, I; Anal Biochem 1993, V215, P253 CAPLUS

L16 ANSWER 9 OF 17 CAPLUS COPYRIGHT 2003 ACS
AN 2001:39513 CAPLUS
DN 134:331329
TI Determination of UV absorbents in sunscreen cosmetic products by HPLC
AU Xu, Wei; Du, Xiaohao; Du, Xuejie
CS Beijing Daily Chemical Research Institute, Beijing, 100061, Peop. Rep. China
SO Riyong Huaxue Gongye (2000), 30(6), 39-43
CODEN: RHGOE8; ISSN: 1001-1803
PB Qinggongyebu Kexue Jishu Qingbao Yanjiuso
DT Journal
LA Chinese
CC 62-4 (Essential Oils and Cosmetics)
AB A method for the HPLC detn. of UV absorbents in sunscreen cosmetic products was presented. The anal. conditions were: YWG-C18 stainless steel column, MeOh-THF-H2O-HClO4 as mobile phase, and detection **wavelength** 310 nm. The detection limit was 1.0-30 ng, the recovery was 92.14-103.12, and the RSD was 1.47-5.62%.
ST sunscreen detn HPLC; liq chromatog sunscreen detn
IT Cosmetics
HPLC

Sunscreens
UV stabilizers
(detn. of UV absorbents in sunscreen cosmetic products by HPLC)

IT 54-21-7, Sodium salicylate 118-55-8, Salol 118-56-9, Eusolex HMS 118-60-5, Escalol 587 131-55-5, Uvinul D-50 131-57-7, Uvinul M-40 150-13-0, PABA 4065-45-6, Uvinul MS-40 5466-77-3, Escalol 557 6197-30-4, Uvinul N 539 15087-24-8, Eusolex 6900 21245-02-3, Padimate O 27503-81-7, Eusolex 232 36861-47-9, **Parsol** 5000 63250-25-9, Eusolex 8020 70356-09-1, **Parsol** 1789 76656-36-5, Uvinul DS-49 88122-99-0, Uvinul T-150 116242-27-4, Uvinul P-25
RL: ANT (Analyte); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(detn. of UV absorbents in sunscreen cosmetic products by HPLC)

L16 ANSWER 7 OF 17 CAPLUS COPYRIGHT 2003 ACS
AN 2001:265225 CAPLUS
DN 134:285486
TI Cosmetic sunscreens comprising an organic UV-A filter and method for displacing the maximum absorption **wavelength**
IN Chodorowski, Sandrine; Quinn, Francis Xavier; Sanchez, Clement
PA L'Oreal, Fr.
SO PCT Int. Appl., 35 pp.
CODEN: PIXXD2
DT Patent
LA French
IC ICM A61K007-42
CC 62-4 (Essential Oils and Cosmetics)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001024768	A2	20010412	WO 2000-FR2687	20000928
	WO 2001024768	A3	20020711		
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	FR 2799120	A1	20010406	FR 1999-12321	19991001
	FR 2799120	B1	20011130		
	BR 2000007188	A	20010904	BR 2000-7188	20000928
	EP 1235552	A2	20020904	EP 2000-966219	20000928
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL				
	JP 2003510342	T2	20030318	JP 2001-527767	20000928
	ZA 2001004121	A	20020503	ZA 2001-4121	20010521
PRAI	FR 1999-12321	A	19991001		
	WO 2000-FR2687	W	20000928		

OS MARPAT 134:285486
AB The invention concerns a substance obtainable by sol-gel process, having a max. absorption **wavelength** (.lambda.max) in the interval ranging between 370 and 400 nm, said substance comprising at least an org. UV-A sunscreen filter having a .lambda.max less than 370 nm, at least a metal alkoxide selected among zirconium, titanium and aluminum alkoxides, at least a functionalized org. polymer or a precursor of such a polymer, or at least a functionalized silicon-coated polymer or a precursor of such a polymer, at least a solvent and an amt. of water sufficient for partial and/or total hydrolysis of the metal alkoxide and its condensation. The invention also concerns a method for displacing in the interval ranging from 370 to 400 nm, the max. absorption **wavelength** of the org. UV-A sunscreen filter having a .gamma.max less than 370 nm, and a cosmetic and/or dermatol. compn. for solar protection of the skin and/or other keratinous materials comprising the inventive substance. Sunscreens contg. tetra-Pr zirconate 9.36, abs. ethanol 2.83, polydimethylsiloxane diol 6.24, **Parsol1789** 0.08, and water 0.02 g.
ST cosmetic sunscreen UVA filter absorption **wavelength**
IT Absorption
Antioxidants
Pigments, nonbiological
Sol-gel processing
Solvents
Sunscreens
Suntanning agents
Thickening agents

(cosmetic sunscreens comprising org. UV-A filter and method for displacing max. absorption **wavelength**)

IT Acrylic polymers, biological studies
Fluoropolymers, biological studies
Metal alkoxides
Polyamides, biological studies
Polycarbosilanes
Polyesters, biological studies
Polyethers, biological studies
Polymers, biological studies
Polyolefins
Polyoxyalkylenes, biological studies
Polyphosphazenes
Polysilanes
Polysiloxanes, biological studies
Polyurethanes, biological studies
Silazanes
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(cosmetic sunscreens comprising org. UV-A filter and method for displacing max. absorption **wavelength**)

IT Alkenes, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(fluoro; cosmetic sunscreens comprising org. UV-A filter and method for displacing max. absorption **wavelength**)

IT Carboxylic acids, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(hydroxy, polymers; cosmetic sunscreens comprising org. UV-A filter and method for displacing max. absorption **wavelength**)

IT Alcohols, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(lower; cosmetic sunscreens comprising org. UV-A filter and method for displacing max. absorption **wavelength**)

L16 ANSWER 5 OF 17 CAPLUS COPYRIGHT 2003 ACS
AN 2002:51221 CAPLUS
DN 136:66322
TI UVA (>360-400) and UVB (300-325) specific sunscreens
IN Fisher, Gary J.; Voorhees, John J.
PA The Regents of the University of Michigan, USA
SO PCT Int. Appl., 33 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM A61K007-42
CC 8-9 (Radiation Biochemistry)
Section cross-reference(s): 62
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2002003940	A2	20020117	WO 2001-US21456	20010706
WO 2002003940	A3	20020613		
W: AE, AG, AL, AU, BA, BB, BG, BR, BZ, CA, CN, CR, CU, CZ, DM, DZ, EE, GD, GE, HR, HU, ID, IL, IN, IS, JP, KP, KR, LC, LK, LR, LT, LV, MA, MD, MG, MK, MN, MX, NO, NZ, PL, PT, RO, SG, SI, SK, TR, TT, UA, UZ, VN, YU, ZA, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
US 2002028185	A1	20020307	US 2001-900535	20010706
EP 1296638	A2	20030402	EP 2001-950944	20010706
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
PRAI US 2000-216244P	P	20000706		
WO 2001-US21456	W	20010706		

AB UVB radiation of about 300-310 nm **wavelength** and UVA radiation of about 380-390 nm **wavelength**, each of which exists in solar light, induces MMPs (matrix metalloproteinases) in human skin that degrade the collagen of the dermal matrix. This degrdn. contributes to photoaging of human skin, which can be prevented by blocking the **wavelengths** of solar radiation at the above **wavelengths**. An example of a sunscreen would comprise a UVB blocker such as **Parsol** MCX and a UVA blocker such as **Parsol** 1789. In contrast, diseases that result in the overprodn. of collagen can be treated by exposing the affected area with radiation having **wavelengths** in those regions, for these **wavelengths** not only induce MMPs but also inhibit collagen biosynthesis. For lighter skinned people so affected, the UVA **wavelengths** are preferred because of the reduced amt. of erythema, whereas dark skinned people can be treated with the UVB radiation because they generally do not suffer from erythema.

ST skin matrix metalloproteinase collagen UV sunscreen; fibrosis skin treatment UV irradn collagen; photoaging skin matrix metalloproteinase sunscreen

IT Skin, disease
(fibrosis; preventing induction of matrix metalloproteinases in UV-exposed skin and treatment of fibrosis with UV radiation)

IT mRNA
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(for collagenase; preventing induction of matrix metalloproteinases in UV-exposed skin and treatment of fibrosis with UV radiation)

IT Skin, disease
(photoaging; preventing induction of matrix metalloproteinases in UV-exposed skin and treatment of fibrosis with UV radiation)

IT Human
Phototherapy
Skin
Solar UV radiation

Sunburn
Sunscreens
UV A radiation
UV B radiation
UV radiation
(preventing induction of matrix metalloproteinases in UV-exposed skin and treatment of fibrosis with UV radiation)

IT 9001-12-1, Matrix metalloproteinase 1 9040-48-6, Gelatinase 141907-41-7, Matrix metalloproteinase
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(preventing induction of matrix metalloproteinases in UV-exposed skin and treatment of fibrosis with UV radiation)

IT 5466-77-3, **Parsol** MCX 70356-09-1, **Parsol** 1789
RL: COS (Cosmetic use); BIOL (Biological study); USES (Uses)
(preventing induction of matrix metalloproteinases in UV-exposed skin and treatment of fibrosis with UV radiation)

L19 ANSWER 5 OF 16 CAPLUS COPYRIGHT 2003 ACS
AN 2002:187106 CAPLUS
TI Photophysical studies of acridine adsorbed on models of atmospheric particulate matter
AU Jimenez-Perez, Maricruz; Arce, Rafael
CS Department of Chemistry, University of Puerto Rico, San Juan, 00931, P. R.
SO Abstracts of Papers, 223rd ACS National Meeting, Orlando, FL, United States, April 7-11, 2002 (2002), CHED-475 Publisher: American Chemical Society, Washington, D. C.
CODEN: 69CKQP
DT Conference; Meeting Abstract
LA English
AB Acridine, a ubiquitous org. environmental pollutant, is an aza-heterocyclic arom. compd. encountered in the atm. particulate matter resulting from incomplete combustion processes, diesel exhaust, coal-oven emissions and coal burning effluents from residential furnaces. To understand the fate of this contaminant on the environment, one has to consider its possible transformation routes, photochem. or thermal. Diffuse reflectance and fluorescence techniques were used to study the interactions of acridine with different surfaces using alumina, silica, magnesium oxide and ammonium sulfate, as models of the atm. particulate matter. Fluorescence bands with maxima at 475nm((NH4)2SO4), 444nm(Al2O3), 468nm(SiO2) and 418nm(MgO) were compared with those obtained in solvents with different polarities; water was used at different pHs. From these comparisons it is proposed that on the surfaces of ammonium sulfate and silica a protonated species of acridine is present, while on magnesium oxide surface the mol. is deprotonated. In alumina, both species were obsd. Diffuse reflectance spectra taken on ammonium sulfate show a band in the **wavelength** region of **370nm**-450nm typical of a protonated species of acridine. Conversely, on silica and magnesium oxide surfaces, a deprotonated ground state species is obsd. From these results, it is suggested that the phototransformations of acridine can depend on the surface interactions with its ground and excited states.

2030

L31 ANSWER 2 OF 2 USPATFULL

SUMM Eosinophils contain an armoury of chemicals necessary for killing parasites. These chemicals have been implicated in the damage to airway epithelium that occurs in asthma and may relate to the observed changes in airway function (26,27). From our studies we suggest that eotaxins should be considered as important mediators of eosinophil accumulation in vivo. Macrophages, lymphocytes, neutrophils, mast cells, airway epithelial cells, connective tissue cells, vascular endothelial cells and eosinophils themselves are likely candidates as the source of the eosinophil chemoattractant activity generated in the lung. Platelets may also have a role as it has been shown that they can release C--C chemokines (22). Further, an early platelet deposition may be involved in the subsequent eosinophil accumulation in vivo (28,29) and there is evidence that platelet-activating factor induces the synthesis of an unidentified eosinophil chemoattractant in vivo (30). In this respect, it is of interest that platelet-derived growth factor can induce gene expression of C--C chemokines in fibroblasts (31). Furthermore, the C--C chemokines have been implicated in wound healing (18). This may be important in the sub-epithelial basement membrane **fibrosis** that is a prominent feature of the asthmatic lung. Thus, eotaxins may be involved in both eosinophil accumulation and in chronic structural changes in the lung.

DETD (iii) For measurement of intracellular calcium levels human and guinea-pig eosinophils (10.sup.7 cells/ml in Ca.sup.2+ /Mg.sup.2+ -free PBS+0.1% BSA) were loaded with fura-2-acetoxymethyl ester (2.5 .mu.M, 30min at 37.degree. C.). After two washes cells were resuspended at 10.sup.6 cells/ml in Ca.sup.2+ /Mg.sup.2+ -free PBS containing 10 mM HEPES, 0.25% BSA and 10 mM glucose (pH 7.4). Aliquots were dispensed into quartz cuvettes and the external [Ca.sup.2+] adjusted to 1 mM with CaCl.sub.2. Changes in fluorescence were monitored at 37.degree. C. using a Perkin Elmer LS50 spectrophotometer at excitation **wavelengths** 340nm and **380nm** and emission **wavelength** 510nm. [Ca.sup.2+].sub.i levels were calculated as described previously (34) using the ratio of the two fluorescence readings and a Kd for Ca.sup.2+ binding at 37.degree. C. of 224nM. Peripheral human eosinophils were prepared as described previously (35) by density centrifugation on Percoll followed by immunomagnetic removal of CD16.sup.+ neutrophils using the MACS system. Guinea-pig eosinophils were prepared as described in Example 1 (11,12).

ACCESSION NUMBER: 1999:155198 USPATFULL

TITLE: Agents for inhibition of chemoattractant

INVENTOR(S): Williams, Timothy J., London, United Kingdom
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Griffiths-Johnson, David A., London, United Kingdom
Hsuan, John J., London, United Kingdom

PATENT ASSIGNEE(S): Imperial College of Science, Technology & Medicine, London, United Kingdom (non-U.S. corporation)

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 5993814		19991130	
	WO 9507985		19950323	
APPLICATION INFO.:	US 1996-615232		19960813	(8)
	WO 1994-GB2006		19940914	
			19960813	PCT 371 date
			19960813	PCT 102(e) date

	NUMBER	DATE
PRIORITY INFORMATION:	GB 1993-18984	19930912
	GB 1994-8602	19940429

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Mertz, Prema
LEGAL REPRESENTATIVE: Nixon & Vanderhye, P.C.
NUMBER OF CLAIMS: 2
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 18 Drawing Figure(s); 8 Drawing Page(s)
LINE COUNT: 1110
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

=>

DETD [0106] A hand-held device containing the low-level light source may be used to photomodulate or photothermally activate, or both, the living tissue or active ingredient in the topical composition, or both, for skin peel, hair reduction, or acne reduction, and either simultaneous or synchronized sequentially in time to deliver another **wavelength** that may be optimal to in view of the absorption characteristics of the patient's fibroblast spectrum or the spectrum of the topical chromophore composition. In the one case it may be the best **wavelength** to stimulate fibroblasts. In another case it may allow selection of a melanin or dye (or other agent) having very strong affinity for the sebaceous gland and very strong absorption at the **wavelength** used for treatment. Similarly the absorption or fluorescent emission spectra of various living cells or subcellular components and light activated chromophores can be analyzed and **wavelengths** suitable for `action` or photomodulation may be identified.

DETD [0108] Exogenous chromophores are substances which absorb light or electromagnetic radiation in at least one narrow band of **wavelengths** and assist with the treatment method and system of the present invention by applying them to an area of the skin to be treated. Selection of the exogenous chromophore is determined by the absoroption spectra of the chromophores and is dependent on the **wavelength** of the narrowband multichromatic emitter used for treatment. In accordance with a preferred embodiment of the invention, the chromophore will aid in treatment by enabling at least the dominant or central **wavelength** of the narrowband, multichromatic radiation to penetrate at least the stratum comeum layer of the skin and permitting the photomodulation or photothermal injury or destruction of living tissue, sebaceous oil gland, duct, or supporting tissue in and below the stratum comeum. In some instances, the photomodulated tissue can be below all of the epithelial layers of the skin.

DETD [0109] Some examples of possible operating parameters may include the **wavelengths** of the electromagnetic radiation to which the living tissue containing cells to be regenerated, stimulated, inhibited, or destroyed, the duration of pulses (pulse duraction) of the electromagnetic radiation, the number of pulses, the duration between pulses, also referred to as repetition rate or interpulse interval. Intervals between treatments can be as long as hours, days, weeks, months, etc.; and the total number of treatments is determined by the response of the individual patient. Further, treatment regimens using a combination of more than one **wavelengths** either simultaneous or in sequence may be used. As well, the energy intensity of the radiation as measured at the living tissue (typically measured in Joules per centimeter squared, watts per centimeter squared, etc.), the pH of the cell, tissue or skin, the skin temperature, and time from application to treatment with a light source, if used with exogenous chromophore (which can be topical, injected, driven in with ultrasound, or systemic) is determined by the nature of the treatment and is further illustrated in the Examples.

DETD [0110] **Wavelength**--Each target cell or subcellular component, or molecular bond therein, tends to have at least one unique and characteristic "action spectrum" at which it exhibits certain electromagnetic or light absorption peaks or maxima, for example, shows the absorption spectrum of one line of human fibroblast cells in monolayer tissue culture. Different cell lines (of the same cell--for example fibroblasts from 3 different patients) exhibit some differences in their absorption spectra and thus using narrow band multichromatic light (rather than monochromatic light) is also useful in producing the optimal clinical effect. When these cells or subcellular components are irradiated with **wavelengths** corresponding to the absorption peaks or maxima, energy is transferred from the light photon and absorbed by the target. The particular features of the delivered energy determine the cellular effects. The complexity of these combinations of parameters has produced much confusion in the prior art. Basically, the

wavelength should roughly correlate with an absorption maxima for the target cell or subcellular component or tissue, or the exogenous chromophore. In some cases it may be desirable to target more than one maxima--either simultaneously or sequentially on the same or different treatment dates. The presence of multiple maxima action spectra are common for a given cell or subcellular component or exogenous chromophore and different **wavelength** maxima irradiation may produce different results.

DETD [0111] If the **wavelength** band is overly broad, then the desired photomodulation effects may be altered from those intended . Consequently, use of broad band noncoherent intense light sources may be less desirable than those specified for use with the present invention, in contrast to the use of multiple narrowband emitters unless they are equipped with one or more filtering devices which allow the transmission of only narrow bands of selected **wavelength**(s). The laser diodes are also multichromatic with narrow **wavelength** bands around a dominant band, i.e., they are narrowband multichromatic devices--devices which emit electromagnetic in a narrow band of radiation either symetrically or asymetrically around a dominant **wavelength**. For purposes of the present invention, any device that emits electromagnetic radiation in a bandwidth of +/- about 100 nanometers around a dominant **wavelength** can be considered to be a narrowband, multichromatic emitter. LEDS, while not monochromatic, emit in such a narrow band as to be considered narrowband multichromatic emitters. The narrow band allows photons of slightly different **wavelengths** to be emitted. This can potentially be beneficial for creating certain desirable multi photon interactions. In contrast, most commercial lasers emit light at a single **wavelength** of light and are considered monochromatic. According to the present invention, however, such lasers can be filtered to produce light intensity levels suitable for use with treatment according to the present invention and, as well, can be filtered to emit a spectrum of light similar to that of LEDs. The use of lasers, according to the prior art, has relied upon the coherent, i.e., monochromatic, nature of their electromagnetic emissions.

DETD [0112] According to the present invention, lasers are a suitable light source but are not used for their ability to emit high intensity radiation or for their monochromatic radiation (single **wavelength** output), as has been done previously. Generally, any source of electromagnetic radiation capable of exposing the target tissue with from about 1.times.10.sup.-6 J/cm.sup.2 to about 10 J/cm.sup.2 of energy in the desired **wavelength** (generally within the range of from about 400 nm to about 1600 nm) will be able to effect modulation of collagen, fibroblast, or fibroblast-derived cells, although 1 J/Cm.sup.2, or less, is preferred to avoid thermal injury. Such light sources can be used in either a continuous wave (long pulse) or in a pulsed manner. Lasers are suitable for use in either mode. Since lasers are monochromatic, the laser may be filtered to produce a narrowband, multichromatic spectrum. In the prior art, lasers were used to produce thermal injury to the skin or target tissue because of their ability to produce high energy fluences. According to the present invention, however, lasers are acceptable because of their wide availability, the assortment of primary **wavelengths** that commercially available models produce, and their ability to produce a wide range of energy fluences (although with some commercial lasers, production of low energy fluences may require filtration of the laser's output).

DETD [0113] **Wavelength** may also determine tissue penetration depth. It is important for the desired **wavelength** to reach the target cell, tissue or organ. Tissue penetration depth for intact skin may be different than the tissue penetration depth for ulcerated or burned skin and may also be different for skin that has been abraded or enzymatically peeled or that has had at least a portion of the stratum comeum removed by any method. It is also important to penetrate any

interfering chromophore that also absorbs at this same **wavelength** (e.g. dark ethnic skin, plastic Petrie dishes for tissue or cell culture, etc.). It is important to penetrate any tissues or organs in its pathway.

DETD [0114] For example, light having a dominant **wavelength** emission in the range of about 400 nm to about 420 nm has such a short **wavelength** that not all sebaceous glands or acne cysts can be effectively treated due to the limited depth of penetration of the radiation, whereas light having a **wavelength** of about 600 nm to about 660 nm can more easily penetrate to a greater depth, if treatment of the lower dermal layers or even deeper is desirable. Accordingly, the selection of the dominant **wavelength** of the radiation emitter is also dependent on the depth of treatment desired. For example indocyanine green dye absorbs around 800 nm and chlorophyll compounds absorb at longer and shorter **wavelengths**, thus the longer **wavelengths** such as these will penetrate better than the 420 nm **wavelength** of protoporphyrin IX. The selection of the proper **wavelength** is one of the significant parameters for effective use of the present invention, but others are important as well:

DETD [0115] Energy Density--The energy density corresponds to the amount of energy delivered during irradiation and is also referred to as energy intensity and light intensity. The optimal `dose` is affected by pulse duration and **wavelength**--thus, these are interrelated and pulse duration is very important--in general high energy produces inhibition and lower energy produces stimulation. Energy fluence, while not synonymous with energy density, is related in that it represents the total amount of energy received at the target skin or tissue and is a product of the energy density, number of pulses, and pulse duration.

DETD [0119] As shown in FIG. 18, at very low energy fluences, there is a trend toward greater collagen production (solid line) than collagen destruction (dashed line). Using anan LED having a dominant emissive **wavelength** of 590 nm it is possible to greatly improve the rate of Procollagen I production compared to the rate of production of mmp-1.

DETD [0125] Beam Profile Shaping--This refers to the pattern of radiation exposure that the skin or target tissue is exposed to. Different beam profiles can alter the photomodulatory effects of a particular treatment regimen (i.e., the combination of **wavelength**, pulse or CW duration, pulse frequency, interpulse interval, etc.)

DETD [0127] While not a limiting factor, a common aspect of the most useful natural chromophores of the present invention is found in their chemical structure. Naturally occuring chromophores have a metal-ligand bonding site. The chemical structure of chlorophyll a is characterized by its R.dbd.CH.sub.3 group. A magnesium atom is present at the metal-ligand bonding site in the Figure. Chlorophyll a exhibits absorption maxima at 409 nm, 429 nm, 498 nm, 531 nm, 577 nm, 613 nm, and 660 nm. Chlorophyll b is characterized by R.dbd.CHO exhibits absorption maxima at 427 nm, 453 nm, 545 nm, 565 nm, 593 nm, and 642 nm. It can be readily seen that various types of chlorophyll, or combinations thereof, can be used as topically applied chromophores to assist the absorption of certain **wavelengths** of light delivered through the skin or soft tissue for various treatments. When used to enhance the absportion of a **wavelength** of light that coincides with an absorption maxima of target cells such as human fibroblasts, treatment can be even more effective or can be carried out with reduced light intensities or can produce multiple beneficial effects, such as treating acne bacteria and reducing or eliminating acne scarring.

DETD [0136] While in nature the light to activate the photolyase typically comes from natural sunlight, essentially any light source, laser and non laser, narrow band or broader bandwidth sources can activate the photolyase if the proper **wavelengths** and treatment parameters are selected. Thus natural sunlight filtered through a selective sunscreen could be used to activate both native and exogenously applied photolyases. Another treatment option would be to apply the photolyase

and then treat with a controlled light source exposure to the proper **wavelength** band and parameters. A wide variety of light sources could be utilized and the range of these is described elsewhere in this application. For example a low energy microwatt narrow band but multispectral LED light source or array with mixed **wavelengths** could be utilized. Another embodiment is a filtered metal halide light source with a dominant **wavelength** of 415nm+/-20 nm and an exposure of 1-30 minutes at 1.times.10.sup.-4-100 milliwatts output can be used. Such exposure would occur minutes to days after application of a topical product containing photolyase.

DETD [0141] There are many causes of free radical damage to cells. In one embodiment wound healing can be accelerated by utilizing a combination of antioxidants, cell growth factors, direct photomodulation (photoactivation) of cells, and photoreactivation through photolyases. Topical or systemic therapy with the proper cofactors and replacing any deficiencies of cofactors can further enhance wound healing. For example, a chonic leg ulcer wound could be treated with an antioxidant mixture of vitamin E, vitamin C and glutathione, as well as cofactors such as fatty acids and keto acids and low level light therapy using and LED array with parameters selected to photostimulate fibroblasts and epithelial cells could also receive treatment with a photolyase and blue light therapy thus greatly accelerating wound healing and healing wounds or bums that would otherwise not be treatable. It is possible by selecting certain photomodulating or electromagneticmodulating parameters to cause `excessive` stimulation and cause, for example, in the case of photomodulation the generation of triplet states and also singlet states producing reactive oxygen species (ROS) or `free radicals`. These ROS can `trigger` a cascade of cellular and subcellular signals and events which are destructive or inhibiting to various key cellular reactions. One such example is the production of ROS by cigarette smoke thus producing an increase in MMP-1 or collagenase enzyme. This can destroy existing or newly formed collagen and thus cause or worsen aging changes in the skin. Similarly, certain **wavelengths** of ultraviolet light produce increases in MMP-1 and other destructive MMP enzymes. It is illustrated in FIGS. 18-21 that photomodulation can also produce increased MMP-1 depending upon the modulating parameters. This is also one reason that including MMP inhibitors in the topical agents can be useful to increasing stimulation of collagen. There are also other MMP enzymes which degrade or destroy various other structural proteins produced by fibroblasts and these proteins and MMP are also subject to photomodulation and exogenous agents manipulation as well.

DETD [0144] The use of a topical light activated exogenous chromophore such as most of the agents listed in this application present no risk of DNA damage and also are generally very safe products--many are natural such as chlorophyll and can be safely used in children and pregnancy and child bearing age women. In addition the treatment is only activated where the topical agent is applied--unlike the use of oral psoralen drugs that activate not only the entire skin but also the retina and other tissues. The light used for this therapy is not only low in power, but it is for the most part visible or infrared light and is not ultraviolet-producing no DNA damage. Note, however, that in certain preferred embodiments of the invention, infrared light is specifically filtered out of the light source. Typical means of performing this filtration are by placing a neutral density filter, one that blocks the transmission of infrared **wavelength** radiation, over the light source.

DETD [0147] Another embodiment involves the use of such a photolyase preparation in the evening after returning from a long day of occupational sun exposure or after an accidental sunburn. A spray or lotion containing the photolyase could be applied and then photorepair/photareacitvation of the acutely damaged DNA in the skin could be performed--and this could be performed with a large beam diameter home therapy unit--of by a white light source which contained

enough of the desired **wavelength** at the proper parameters to produce this reaction. Additionally an antioxidant skin formulation could be also applied to minimize erythema and other undesired effects of the sunburn. One such embodiment would be the preparation described earlier with a combination of vitamin C, vitamin E and glutathione and free fatty acids and one or more keto acids. A similar formulation could contain these agents but utilize only one or two of the three antioxidants listed.

DETD [0154] The **wavelength** or bandwidth of **wavelengths** is one of the critical factors in selective photomodulation. Pulsed or continuous exposure, duration and frequency of pulses (and dark `off` period) and energy are also factors as well as the presence, absence or deficiency of any or all cofactors, enzymes, catalysts, or other building blocks of the process being photomodulated.

DETD [0158] Different parameters with the same **wavelength** may have very diverse and even opposite effects. When different parameters of photomodulation are performed simultaneously different effects may be produced (like playing a simple key versus a chord on a piano). When different parameters are used serially or sequentially the effects are also different--in fact depending on the time interval we may cancel out the prior photomodulation message (like canceling burglar alarm).

DETD [0159] The selection of **wavelength** photomodulation is critical as is the bandwidth selected as there may be a very narrow bandwidth for some applications--in essence these are biologically active spectral intervals. Generally the photomodulation will target flavins, cytochromes, iron-sulfur complexes, quinines, heme, enzymes, and other transition metal ligand bond structures though not limited to these.

DETD [0165] In one embodiment the chromophore is delivered into the fat layer under the skin on the thigh using external ultrasound to enhance skin permeability and also enhance transport. The alteration of the stratum corneum alone or in combination with the ultrasound can further enhance delivery of the chromophore. External massage therapy from various techniques can be used to enhance the treatment process. In another embodiment chromophore is injected into the fat layer prior o treatment with light. Some light therapy with or without ultrasound may be used to photomodulate or photothermally or ultrasonically increase or otherwise alter the circulation or microciruclation or local metabolic processes in the areas affected by cellulite or other tissues. The proper light parameters are selected for the target adipocytes, blood vessels, exogenous chromophores, etc. Since some of the target tissues in cellulite are deeper than for example wrinkles or acne, typically long enough **wavelengths** of light must be utilized so that the light penetrated deeply enough to reach the target tissue.

DETD [0172] Six females are treated to reduce wrinkles. The entire face of the patient is subjected to the light from the LED light source. Three treatments over 12 weeks to the entire face with 250 millisecond pulses, an interpulse delay of 100 milliseconds, and 100 repetitions, resulting in a total energy fluence of 70.0 milliJ/cm.sup.2. The average reduction in wrinkles is shown in Table 1. The light source has a dominant emissive **wavelength** at 574 nm.

TABLE 1

Week/Value	Averaged Value of Reduction
0 weeks	0%
4 weeks	28%
8 weeks	56%
12 weeks	64%

DETD [0174] Six females are treated to reduce wrinkles. The entire face of the patient is subjected to the light from the LED light source. Three treatments over 12 weeks to the entire face with 250 millisecond pulses, an interpulse delay of 100 milliseconds, and 100 repetitions, resulting

in a total energy fluence of 30.0 milliJ/cm.sup.2. The average reduction in wrinkles is shown in Table 3. The light source has a dominant emissive **wavelength** at 590 nm. An optical lowpass filter was placed over the light source to block the transmission of **wavelengths** longer than 700 nm.

TABLE 2

Week/Value	Averaged Value of Reduction
0 weeks	0%
4 weeks	32%
8 weeks	63%
12 weeks	71%

DETD [0176] Six females are treated to reduce wrinkles. The entire face of the patient is subjected to the light from the dye laser light source. Three treatments over 12 weeks to the entire face with 0.2 millisecond pulses, an interpulse delay of 100 milliseconds, and 100 repetitions, resulting in a total energy fluence of 100.0 milliJ/cm.sup.2 (a neutral density filter was placed over the light source to limit the total energy fluence). The average reduction in wrinkles is shown in Table 3. The light source has a dominant emissive **wavelength** at 560 nm with the use of an optical filter designed to diffract the emission spectrum of the dye laser to produce usable output in a +/-15 nm range relative to the dominant emissive **wavelength**.

TABLE 3

Week/Value	Averaged Value of Reduction
0 weeks	0%
4 weeks	17%
8 weeks	23%
12 weeks	30%

DETD [0177] Six males are treated to improve cutaneous blood flow for the purpose of stimulating hair growth. Twelve weekly treatments are performed on each patient's scalp using a 50 second continuous wave produced by a metal halide light source filtered to reduce infrared **wavelengths** to avoid heating the skin above to threshold for thermal injury. The metal halide light source produces a dominant emissive **wavelength** of 420 nm. The target tissue receives a total energy fluence of approximately 100.0 milliJ/cm.sup.2. Measuring cutaneous blood flow with a Doppler cutaneous blood flow meter in an environmentally controlled room indicates an average increase in cutaneous blood flow of 22% among the test subjects.

DETD [0181] A particularly advantageous treatment regimen of the present invention is illustrated by treating patients exhibiting acne and acne scarring. Nine treatments are administered over 12 weeks using a combination of red (620 nm) and blue (415 nm) LEDs (the indicated **wavelength** for each being the dominant emissive **wavelength**). The facial area of each patient is treated with a total energy fluence of approximately 40 milliJ/cm.sup.2 to 90 milliJ/cm.sup.2, per session, from a simultaneous continuous wave of approximately 18 minutes in duration from both sources. Each patient exhibits a substantial decrease in visible acne and acne scarring as well as a reduction in the presence of acne bacteria.

DETD [0182] A particularly advantageous treatment regimen of the present invention is illustrated by treating patients exhibiting acne and acne scarring. Nine treatments are administered over 12 weeks using a combination of red (620 nm) and blue (415 nm) LEDs (the indicated **wavelength** for each being the dominant emissive **wavelength**). The facial area of each patient is treated with a

total energy fluence of approximately 40 milliJ/cm.sup.2 to 90 milliJ/cm.sup.2, per session, from a continuous wave of approximately 18 minutes in duration from the red LED and another continuous wave of approximately 18 minutes from the blue LED. Prior to exposure to the light source, the target tissue of each patient is treated with a 3% copper chlorophyllin solution. Each patient exhibits a substantial decrease in visible acne and acne scarring as well as a reduction in the presence of acne bacteria.

DETD [0183] A particularly advantageous treatment regimen of the present invention is illustrated by treating patients exhibiting acne and acne scarring. Nine treatments are administered over 12 weeks using multiple LEDs, each having a dominant emissive **wavelength** of 810 nm, arranged in a 0.5 W/cm.sup.2 array. The facial area of each patient is treated with a total energy fluence of approximately 40 milliJ/cm.sup.2, per session, from a continuous wave of approximately 80 seconds in duration. Prior to exposure to the light source, the target tissue of each patient is treated with a 3% indocyanine green solution. Each patient exhibits a substantial decrease in visible acne and acne scarring as well as a reduction in the presence of acne bacteria.

CLM What is claimed is:

1. A method for the manipulation of collagen, fibroblast, and fibroblast-derived cell levels in mammalian tissue comprising: exposing said tissue to a plurality of pulses from at least one source of narrowband, multichromatic electromagnetic radiation having a dominant emissive **wavelength** of from about 300 nm to about 1600 nm, wherein said pulses have a duration of from about 0.1 femtoseconds to about 100 seconds, the interpulse delay between said pulses is from about 0.1 to about 1000 milliseconds, and the energy fluence received by said tissue is less than about 10 joule per square centimeter.

2. The method of claim 1 wherein said source of narrowband, multichromatic electromagnetic radiation is selected from a light emitting diode, a laser, a fluorescent light source, an organic light emitting diode, a light emitting polymer, a xenon arc lamp, a metal halide lamp, a filamentous light source, an intense pulsed light source, a sulfur lamp, and combinations thereof, and said dominant emissive **wavelength** is from about 400 nm to about 1600 nm.

11. The method of claim 1 wherein said source of electromagnetic radiation is filtered to reduce the perception by said tissue of radiation having a **wavelength** greater than about 700 nm.

13. A method for the manipulation of collagen, fibroblast, and fibroblast-derived cell levels in mammalian tissue comprising: exposing said tissue to at least one source of narrowband, multichromatic electromagnetic radiation having a dominant emissive **wavelength** of from about 300 nm to about 1600 nm for a period of time of from about 10 seconds to about 24 hours, wherein the energy fluence received by said tissue is less than about 10 J/cm.sup.2.

14. The method of claim 13 wherein said source of narrowband, multichromatic electromagnetic radiation is selected from a light emitting diode, a laser, a fluorescent light source, an organic light emitting diode, a light emitting polymer, a xenon arc lamp, a metal halide lamp, a filamentous light source, a sulfur lamp, and combinations thereof, and said dominant emissive **wavelength** is from about 400 nm to about 1600 nm.

21. The method of claim 13 wherein said source of electromagnetic radiation is filtered to reduce the perception by said tissue of radiation having a **wavelength** greater than about 700 nm.

ACCESSION NUMBER: 2003:4510 USPATFULL
TITLE: Low intensity light therapy for the manipulation of

fibroblast, and fibroblast-derived mammalian cells and collagen

INVENTOR(S): McDaniel, David H., Virginia Beach, VA, UNITED STATES

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LEGAL REPRESENTATIVE: Wayne C. Jaeschke, Jr., Morrison & Foerster LLP, Suite 5500, 2000 Pennsylvania Avenue, N.W., Washington, DC, 20006-1888

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EXEMPLARY CLAIM: 1

L8 ANSWER 6 OF 6 USPATFULL

CLM What is claimed is:

1. A transdermal drug delivery system which comprises: a therapeutically effective amount of at least one physiologically active agent; and at least one dermal penetration enhancer present in an amount of from 10 to 10,000 wt % based on the weight of the active agent; wherein the dermal penetration enhancer is at least one of a safe **skin**-tolerant ester **sunscreen** of formula (I): ##STR2## wherein R.sup.3 is hydrogen, lower alkyl, lower alkoxy, halide, hydroxy or NR.sup.3 R.sup.4 ; R.sup.2 is a C.sub.8 to C.sub.18 alkyl, R.sup.3 and R.sup.4 are each independently hydrogen, lower alkyl or R.sup.3 and R.sup.4 together with the nitrogen atom to which they are attached form a 5- or 6-membered heterocyclic ring; n is 0 or 1, and q is 1 or 2, wherein when n is 0 and R.sup.1 is NR.sup.3 R.sup.4, then NR.sup.3 R.sup.4 is para-substituted.

13. A method according to claim 11, wherein the disease or condition is soft tissue injury, narcotic withdrawal, severe post-operative pain, motion sickness, oestrogen dependent breast cancer, prostatic enlargement and/or prostatic cancer, alopecia and acne, anxiety disorders, male impotence, Raynauds syndrome and varicose veins, sleep disorders, jetlag, herpes virus infections, deep vein thrombosis, migraine, high blood pressure, malaria, diagnosis of cystic **fibrosis**, asthma or nocturnal asthma.

14. A non-occlusive, percutaneous or transdermal drug delivery system which comprises: (i) a therapeutically effective amount of at least one physiologically active agent; (ii) at least one dermal penetration enhancer, which is a safe **skin**-tolerant ester **sunscreen**, and is present in an amount of from 10 to 10,000 wt % based on the weight of the active agent; (iii) at least one volatile liquid present in an amount to act as a vehicle for the active agent and penetration enhancer; wherein: the dermal penetration enhancer (A) is adapted to transport the physiologically active agent across a dermal surface or mucosal membrane of an animal, when the volatile liquid evaporates, to form a reservoir or depot of a mixture comprising the penetration enhancer and the physiologically active agent within said surface or membrane, and (B) is of low toxicity to, and is tolerated by, the dermal surface or mucosal membrane of the animal; and, after application of the system to an area of the dermal surface, the area becomes touch-dry within 3 minutes of application.

ACCESSION NUMBER:	2001:173164 USPATFULL
TITLE:	Dermal penetration enhancers and drug delivery systems involving same
INVENTOR(S):	Reed, Barry Leonard, Strathmore, Australia Morgan, Timothy Matthias, Parkville, Australia Finnin, Barrie Charles, Glen Iris, Australia
PATENT ASSIGNEE(S):	Monash University, Victoria, Australia (non-U.S. corporation)

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